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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/575,430	04/10/2006	Paulus Cornelis Duineveld	92781-253566	3725

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Venable LLP
Raymond J. Ho
575 7th Street NW
Washington, DC 20004-1601

EXAMINER
RALEIGH, DONALD L

ART UNIT	PAPER NUMBER
2879	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/575,430	DUINEVELD ET AL.	
	Examiner	Art Unit	
	DONALD L. RALEIGH	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 January 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) *16-17* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/09/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 12/09/2008 was filed after the mailing date of the non final office action on October 3, 2008. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Response to Amendment

The Amendment, filed on January 2, 2009 has been entered and acknowledged by the examiner.
Claims 1-17 are pending in the instant application.
Claims 16-17 have been withdrawn from further consideration.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuwabara (US PG Pub. No. 2005/0057151) in view of Sirringhaus et al (US Patent No. 6,808,972).

Regarding Claims 1 and 7, Kuwabara discloses in Figures 1A and 1B, an electroluminescent display panel comprising a substrate (20) and a plurality of display

pixels (Paragraph [0196], lines 1-2), including an electroluminescent material (24) defined on or over said substrate (20) wherein said display panel further includes at least one hydrophobic layer (21)(Paragraph [0082], lines 4-5) between at least some adjacent display pixels (see Figure 1B), wherein the hydrophobic layer (21) is disposed between drops of the electroluminescent material (24) of adjacent display pixels (shown in Figure 1B) and prevents mixing of these drops between adjacent display pixels (It is obvious from figure 1B that the layer (24) would prevent mixing).

Kuwabara fails to disclose that the hydrophobic layer is microcontact printed.

Sirringhaus teaches forming a hydrophobic layer as a self-assembling monolayer(Column 14, lines 34-40) using micro-contact printing (Column 14, lines 40-43) in order to print very thin polyimide films that are thinner than the inkjet droplets (Column 14, lines 3-6).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to incorporate the micro-contact printed hydrophobic layer, as taught by Sirringhaus, in the device of Kuwabara, in order to print very thin polyimide films that are thinner than the inkjet droplets.

Regarding Claim 2, Kuwabara, fails to exemplify the electroluminescent display panel wherein said hydrophobic layer is a self-assembling monolayer.

Sirringhaus teaches forming a hydrophobic layer as a self-assembling monolayer(Column 14, lines 34-40) using micro-contact printing (Column 14, lines 40-43) in order to print very thin polyimide films that are thinner than the inkjet droplets (Column 14, lines 3-6).

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to incorporate the hydrophobic elements with a patterned self-assembled monolayer of Sirringhaus into the method of fabricating an electroluminescent display panel of Marks in order to print very thin polyimide films that are thinner than the inkjet droplets.

Regarding Claim 3, Kuwabara fails to exemplify the electroluminescent display panel wherein said substrate is a flexible substrate.

Sirringhaus teaches wherein said substrate is a flexible substrate (Column 1, lines 25-29) in order to achieve cheap large-area solutions.

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to incorporate the flexible substrate of Sirringhaus into the electroluminescent display panel of Kuwabara, in order to achieve cheap large-area solutions.

Regarding Claim 4, Kuwabara discloses in Figure 1B, the electroluminescent display panel wherein said display panel further comprises first (23) and second electrodes (25)(Paragraph [0084]) for said display pixels (the pixel is the combination of the two electrodes and the electroluminescent layer (24)), and a protection layer (28) isolating said first from said second electrodes between said display pixels (see figure 1B).

Regarding Claim 5, Kuwabara discloses in Figure 1B, the electroluminescent display panel wherein said microcontact printed hydrophobic layer (21) is defined on or over at least a part of said protection layer(28).

Regarding Claim 6, Kuwabara discloses in Figure 1B, an electroluminescent display panel wherein said microcontact printed hydrophobic layer (21) exposes a part of said protection layer (28) to said electroluminescent material (24)(they are in contact).

Regarding Claim 8, Kuwabara discloses at least in Figures 1A and 1B, a method for manufacturing an electroluminescent display panel (Paragraph 0002], lines 1-4) comprising the steps of: providing a substrate (20); providing a hydrophobic layer (21) for separating at least some adjacent display pixels (see Figure 1B) on or over said substrate (20); and depositing at least one electroluminescent material (24) over said substrate (20) wherein the hydrophobic layer (21) prevents mixing of drops of the electroluminescent material (24)(Figure 1B shows this. Also, see Paragraph [0021], lines 10-11).

Kuwabara fails to disclose that the hydrophobic layer is printed by microcontact printing.

Sirringhaus teaches wherein said hydrophobic layer is micro-contact printed (Column 14, lines 40-43) in order to print very thin polyimide films that are thinner than the inkjet droplets (Column 14, lines 3-6).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to incorporate the micro-contact printed hydrophobic layer, as taught by Sirringhaus, in the device of Kuwabara, in order to print very thin polyimide films that are thinner than the inkjet droplets.

Regarding Claim 9, Kuwabara discloses in Figure 1A, the method wherein said method further comprises the steps of: providing first electrodes (13) on or over said

substrate (10); providing a protection layer (12)(second bank) on said substrate (10), patterning said protection layer(12) (Paragraph [0075], line 15) to determine display pixel areas (14)(see Figure 1A); providing said hydrophobic layer (11)(first bank)(Para. [0021], lines 7-8 teaches that the first bank is hydrophobic) between said display pixel areas (14).

Kuwabara fails to disclose that the hydrophobic layer is provided by microcontact printing.

Sirringhaus teaches wherein said hydrophobic layer is micro-contact printed (Column 14, lines 40-43) in order to print very thin polyimide films that are thinner than the inkjet droplets (Column 14, lines 3-6).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to incorporate the micro-contact printed hydrophobic layer, as taught by Sirringhaus, in the device of Kuwabara, in order to print very thin polyimide films that are thinner than the inkjet droplets.

Regarding Claim 10, Kuwabara discloses in Figure 1A, the method wherein said method further comprises the steps of: depositing at least one electroluminescent material (14) over said substrate (10); providing a metallic layer (15)(cathode) on or over at least said electroluminescent material (14)(Figure 6B shows the steps in the method).

Regarding Claim 11, Kuwabara discloses in Figure 1A, the method wherein said hydrophobic layer (11) is obtained by fluorinating (Paragraph [0085], lines 1-3).

Kuwabara fails to disclose that the hydrophobic layer is a microcontact printed layer.

Sirringhaus teaches wherein said hydrophobic layer is micro-contact printed (Column 14, lines 40-43) in order to print very thin polyimide films that are thinner than the inkjet droplets (Column 14, lines 3-6).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to incorporate the micro-contact printed hydrophobic layer, as taught by Sirringhaus, in the device of Kuwabara, in order to print very thin polyimide films that are thinner than the inkjet droplets.

Regarding Claim 12, Kuwabara, fails to disclose the method wherein said hydrophobic layer is microcontact printed on an inorganic layer, such as SiO_2 or ITO.

Sirringhaus teaches a microcontact printed hydrophobic layer (Column 14, lines 34-43) on the surface of a SiO_2 layer (Column 14, lines 60-61)in order to form stable monolayers on the surface of the SiO_2.

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to incorporate the process of providing a microcontact printed hydrophobic layer on the surface of a SiO_2 layer, as taught by Sirringhaus, into the method of Kuwabara, in order to form stable monolayers on the surface of the SiO_2.

Regarding Claim 13, Kuwabara fails to disclose the method wherein said hydrophobic layer is trimethoxy(3,3,3 -trifluoropropyl)silane.

Sirringhaus teaches the method wherein said hydrophobic layer is trimethoxy(3,3,3 -trifluoropropyl)silane (Column 14, lines 57-65) in order to achieve

functionalization of the surface of the glass substrate with a patterned self-assembled monolayer (Column 14, lines 36-37).

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to incorporate the process of adding trimethoxy(3,3,3--trifluoropropyl)silane to the hydrophobic layer, as taught by Sirringhaus, into the method of Kuwabara, in order to achieve functionalization of the surface of the glass substrate with a patterned self-assembled monolayer.

Regarding Claim 14, Kuwabara fails to disclose the method wherein said hydrophobic layer is microcontact printed on a polymer layer.

Sirringhaus teaches wherein said hydrophobic layer is microcontact printed on a polymer layer (Column 14, lines 57-65)(The monolayer refers to the hydrophobic layer of Column 14, lines 35-44) in order to form a stable monolayer (Column 14, line 60-61)(The monolayer refers to hydrophobic layer of Column 14, lines 35-44].

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to incorporate the microcontact printing of a monolayer on a polymer dielectric layer, as taught by Stirringhaus into the method of fabricating an electroluminescent display panel of Kuwabara, in order to form a stable monolayer.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuwabara (151) in view of Sirringhaus (972) and further in view of Cox (US Patent No. 6,166,439) and Chilkoti et al (US PG Pub. No. 2003/0059537)

Regarding Claim 15, Kuwabara, as modified by Sirringhaus, fails to disclose the method wherein said hydrophobic layer is obtained by the steps of: microcontact printing of poly(tert-butylacrylate) on a polyethylene layer; wet- chemical treatment of said poly(tert-butylacrylate) to yield a polyacrylic acid hyperbranched film; fluorination of at least a part of said polyacrylic acid hyperbranched film.

Chilkoti teaches (Paragraph [0139], lines 5-6) using microcontact printing (also, the title (microstamping)) of poly(tert-butylacrylate) on a polyethylene layer and paragraph [0068], lines 1-19, teaches the combination of polyethylene (line 8) and polyacrylates (line 12) which would include poly(tert-butylacrylate) to impart non-biodegradable hydrophobic properties to the backbones of the comb copolymers (Paragraph [0068], lines 5-7).

Finally, Cox teaches wet-chemical treatment (Column 7, line 59 (hydrolysis)) of said poly(tert-butylacrylate (lines 58-59) to yield a polyacrylic acid (line 60) hyperbranched film (lines 61-62, high degree of branching) and fluorination of at least a part of said polyacrylic acid hyperbranched film (line 55, addition of fluorinated polymer) in order to bond a polymeric material to an insulating layer or a substrate. (Abstract, lines 5-11).

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to incorporate the microcontact printing of polyacrylates (poly(tert-butylacrylate) on a polyethylene layer of Chilkoti and using the wet chemical treatment and fluorination of Cox in manufacturing the electroluminescent display panel of

Kuwabara as Sirringhaus, in order to bond a polymeric material to an insulating layer or a substrate and to impart non-biodegradable hydrophobic properties to the backbones of the comb copolymers .

Response to Arguments

Applicant's arguments filed January 2, 2009 have been fully considered but they are not persuasive. With respect to claim 1, applicant's argues that Kuwabara teaches printing a hydrophobic layer between pixels by photolithography and Sirringhaus teaches printing a hydrophobic layer by microcontact printing but not between pixels and there is no motivation to combine. Examiner disagrees: the motivation is because microcontact printing is able to print thinner layers than inkjet droplets, as stated in the office action. It is reasonable to expect one of ordinary skill in the art, to try micro-contact printing in between the pixels.

Applicant's arguments regarding dependent claims 7-8, 9-14, and 15 are based upon applicant's arguments regarding claim 1 and thus are not persuasive.

Conclusion

Applicant's arguments with respect to the patentability of the claims of the office action of October 3, 2008 are not persuasive, therefore:

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DONALD L. RALEIGH whose telephone number is (571)270-3407. The examiner can normally be reached on Monday-Friday 7:30AM to 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Peter J Macchiarolo/

Primary Examiner, Art Unit 2879

/Donald L Raleigh/
Examiner, Art Unit 2879